**PIN10**

### CLINICAL AND ECONOMIC OUTCOMES OF INVASIVE ASPERGILLOSIS (IA) IN THE CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) NON-TRADITIONAL HOST: A HOSPITAL DATABASE ANALYSIS

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**OBJECTIVES:** To describe the clinical and economic burden of COPD patients with IA (COPD + IA), antifungal treatment patterns, and the impact of index antifungal selection on total costs, length of stay (LOS) and mortality. **METHODS:** This retrospective cohort study used 2005–2008 data from the Premier Perspective database of >500 U.S. hospitals. COPD + IA patients were identified based on ICD-9 codes for COPD + Aspergillosis + Pneumonia. Patients were excluded if ICD-9 codes were present for malignancies, HIV, or conditions that increase risk for IA aside from COPD. Demographics, hospital characteristics, and antifungal treatment patterns were examined. Excess resource utilization was analyzed by matching cases (COPD + IA) and controls (COPD patients without Aspergillosis) on demographic and clinical variables. Regression analyses were conducted on the impact of the index antifungal on total costs, LOS and mortality controlling for patient demographics, hospital characteristics, co-morbidities, and disease severity. **RESULTS:** We identified 475 COPD + IA patients (mean age 69 years, 50% male, 76% Caucasian). COPD + IA cases had significantly higher costs ($48,163 vs $30,210), LOS (23.2 vs 13.6 days), ICU stay (13.8 vs 7.2 days), and mortality (29% vs 23%) compared to COPD controls (all $p < 0.01$). Antifungal therapy was initiated on day 6, with length of therapy of 15 days, and one-third of patients were in ICU when initiated. Most commonly used antifungals were voriconazole, fluconazole, and caspofungin. After controlling for covariates, patients receiving fluconazole as the index antifungal had greater mortality (40% vs 22%, $p = 0.023$), 4 additional hospital days ($p = 0.007$), and 24% greater costs ($p = 0.003$) compared to patients receiving voriconazole first-line. Findings were consistent in sub-analyses (eg, ICU patients). **CONCLUSIONS:** COPD + IA patients had significantly higher mortality, resource utilization, and costs versus controls. Treatment with an agent active against Aspergillus increased survival and reduced economic burden, thus this potential etiology should be considered when contemplating antifungal therapy in COPD patients.

**PIN11**

### A LONGITUDINAL DATABASE STUDY OF ECONOMIC CONSEQUENCES OF CHRONIC HEPATITIS C VIRUS (HCV) INFECTIONS IN THE U.S.

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**OBJECTIVES:** Estimate the incremental impact of HCV on health care costs and events using claims data from a large U.S. health insurance provider. **METHODS:** 1:1 matched samples of newly diagnosed HCV and non-HCV patients were identified using propensity scoring techniques. Costs and events were measured over the first post-diagnosis year for HCV patients. Non-HCV patients were assigned an index date corresponding to the index date of their matched HCV patient. **RESULTS:** A total of 60,806 HCV patients were identified using 6 years of data based on two or more HCV diagnoses or a single diagnosis combined with an HCV-related prescription. Further screening for at least one year of eligibility prior to index date and pre-existing HIV, hepatitis B, cirrhosis, liver cancer or a liver transplant resulted in an initial HCV population of 9191 patients. An additional 410,605 non-HCV patients were identified with similar criteria during their first year of eligibility. Both samples were used to estimate a parsimonious logistic propensity score model of HCV diagnosis. A total of 9,129 HCV patients were matched with non-HCV patients [99.3% match rate]. The incremental cost of HCV was estimated at +$17,307 over the first post-index year. HCV doubled the likelihood of hospitalization or a future diagnosis of depression and dramatically increased the risk of cirrhosis, liver cancer and liver transplantation were increased dramatically by an HCV infection [OR = 62.4, 26.4 and 44.4 respectively]. **CONCLUSIONS:** The incremental cost of HCV in the first post-index year is quite high due in part to the increased risk of cirrhosis, liver cancer and transplantation. A longer term study is needed to investigate economic consequences over time for these newly recognized HCV patients.

**PIN12**

### THE COST OF TUBERCULOSIS CONTROL IN THE ADULT POPULATION OF THE REPUBLIC OF ARMENIA, 2006

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**OBJECTIVES:** The economic burden of tuberculosis (TB) in Armenia, to our knowledge, has not been assessed. The objective of our study was to estimate total yearly direct costs of TB care for adult patients in Armenia, from a societal perspective, for 2006. **METHODS:** We used official sources of epidemiological data to estimate the total number of prevalent cases of TB within the adult population, including those from the civil population and the Armenian penitentiary system. The average direct total costs per TB patient were assumed to be similar to the costs reported for the Russian Federation. We base this assumption on the similar health care systems, TB policies and case management within these two countries. Sensitivity analyses have been conducted to define possible ranges for costs of TB care in Armenia. **RESULTS:** The incidence and prevalence rates of TB in Armenia in 2006 were 48.6 and 176.1 per 100.000 inhabitants, respectively. About 75.9% of all TB cases were smear-positive (BK+); overall proportion of children and adolescents was about 8.1%. Assuming that the average yearly per-patient costs of managing BK+ and smear-negative (BK-) cases were $359 and $239, respectively, an overall cost estimate for TB control in the adult population of Armenia for 2006 totals to USD 1.41 mill. (range: USD 1.34–1.48 mill.). **CONCLUSIONS:** Despite the uncertainties around current prevalence estimates and cost data per TB patient in Armenia, even the lowest possible range of the estimated overall economic burden of TB seems to be prohibitively high for a developing country such as Armenia. Insufficient financial resources available for controlling this disease may contribute to the worsening of epidemics. Further studies are warranted to assess the current epidemiological situation and costs of TB management in Armenia.

**PIN13**

### IMPACT ON COST OF INAPPROPRIATE INITIAL EMPIRICAL USE OF ANTIBIOTIC IN PATIENTS WITH COMPLICATED INFECTIONS FROM TWO LARGE BRAZILIAN HOSPITALS

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**OBJECTIVES:** To analyze and compare costs of treatment of complicated infections from patients in public and private hospitals **METHODS:** A retrospective (2008–2009) medical chart analysis was performed in two hospitals in Sao Paulo City, Brazil: Private setting and Public setting. Data from patients over 18 years old with complicated skin/soft tissues infections, complicated abdominal infections and Community Acquired Pneumonia (CAP) were analysed according with type and etiologic agent of infection, antibiotic use as empiric therapy, bacterial resistance environment and ward or ICU treatment and patients. Total treatment costs were evaluated and expressed in Brazilian local currency (Reais) **RESULTS:** A total of 50 medical records randomly screened were analyzed, 25 from each hospital. Approximately 34% of each pathology and 32% of patients had ICU hospitalization in both settings. The average cost of private hospital was R$17,072.08, being 55% due to antibiotics use. Ceftriaxone was the most used antibiotic as initial therapy,50% of cases. 56% of patients in private hospital had to change antibiotic therapy once at least. In public hospital average cost was R$ 2,051.40 and the antibiotics change remained in the same proportion comparing to the private hospital. Mortality rate was different in Private in Public setting **CONCLUSIONS:** The use of appropriate empirical therapy of antibiotic is essential and appears as an important cost driver, mainly to the decision makers who under these total acknowledgement (scientific and economic aspects) could have a useful tool for supply policy interventions. Furthermore combining clinical and cost allows for the best choice of antibiotic use as empirical therapy in these patients

**PIN14**

### REDUCTION OF ACUTE OTITIS MEDIA IN CHILDREN: A COST-CONSEQUENCE ANALYSIS OF A 7-, 10- AND 13-VALENT PNEUMOCOCCAL CONJUGATE VACCINE IN CANADA

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**OBJECTIVES:** Acute otitis media (AOM) is extremely common in young children, with 75% having at least one episode by one year of age. *Streptococcus pneumoniae* (Sp) and non-typeable *Haemophilus influenzae* (NTHi) are the two most commonly isolated pathogens in AOM cases. The 7-valent (PCV-7) and 13-valent (PCV-13) pneumococcal conjugate vaccines have similar carrier proteins and protect only against AOM caused by Sp serotypes contained in the vaccines. The 10-valent pneumococcal vaccine (PHiD-CV) has eight of its ten serotypes conjugated to protein D from NTHi and may be regarded as the first dual pneumococcal pathogen vaccine with a potential to prevent AOM caused by both Sp and NTHi. We estimate the clinical and economic impact of these three vaccines on AOM outcomes in Canada. **METHODS:** A steady-state, population-based model with a one-year time horizon was developed and calibrated with Canadian epidemiologic and demographic data. The health care system perspective was considered assuming 100% vaccination coverage, no herd protection and a 3 + 1 vaccination schedule. One-way sensitivity analysis was preformed to assess the impact of changes in key model assumptions. **RESULTS:** At price parity, the annual AOM-related cost-savings to the Canadian health care system due to the implementation of a PHiD-CV vaccination program is estimated at $17.1M and $12.3M compared to PCV-7 and PCV-13 respectively. Compared to PCV-7, vaccination with PHiD-CV could prevent an additional 171,162 ambulatory visits for AOM, 144,632 antibiotic prescriptions for AOM, and 9,827 hospitalizations for myringotomy per year. Compared to PCV-13, PHiD-CV could prevent 123,385 ambulatory visits for AOM, 104,269 antibiotic prescriptions for AOM, and 7,084 hospitalizations for myringotomy per year. Sensitivity analyses indicate that efficacy against AOM have the biggest impact on model results. **CONCLUSIONS:** Implementation of a PHiD-CV vaccination program in Canada is projected to substantially reduce AOM burden compared to PCV-7 or PCV-13.

**PIN15**

### COST-EFFECTIVENESS OF THREE CARBAPENEMIC ANTI-INFECTIVES FOR TREATMENT OF VENTILATOR-ASSOCIATED PNEUMONIA (VAP) IN COLOMBIA

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**OBJECTIVES:** Determine the cost-effectiveness of three carbapenemic anti-infectives (imipenem, meropenem and doripenem) for treatment of VAP in Colombia.